REMARKS

Claims 1-24 are pending in the application. Claims 1, 9, 16, and 22 have been again amended to address the Examiner's rejection under 35 USC 102. The specification has been amended to correct a typographical error. No new matter has been added by these amendments. Reconsideration is respectfully requested in view of the foregoing amendments and the following remarks. The foregoing amendments and the following remarks are fully responsive to the Office Action and are believed to render all pending claims at issue patentably distinct over the cited references. The foregoing amendments are made in the interest of expediting prosecution, and there is no intent to surrender any range of equivalents to which Applicant would otherwise be entitled in view of the prior art.

I. CLAIM REJECTION UNDER 35 USC § 102

Claims 1 to 24 were again rejected under 35 USC § 102 as anticipated by Diaz et al. With regard to claims 1-8, and 16-24, the rejection is believed to be in error for at least the following reason. As previously pointed out, the Diaz et al. reference fails to disclose allocating a first interval for transmission of periodic data over the databus.

The Examiner states that the Diaz reference discloses a network architecture supporting periodic and aperiodic transmission of data. Diaz discloses, however the transmission of asynchronous and isochronous data. The Diaz disclosure seems to consider isochronous data as a form of periodic data. In the instant application, however, there is a clear distinction made

between periodic data and aperiodic data. Aperiodic data is that data that comprises both asynchronous and isochronous data. Periodic data as used in the instant application and as defined therein (see, for example, page 2 lines 2 et seq.) comprises "periodic or deterministic data which is communicated according to predetermined timing sequences and cycles..." The Diaz reference, on the other hand, refers only to aperiodic data in the form of isochronous data and asynchronous data. In Diaz, the isochronous data is not transmitted according to predetermined timing sequences, but is transmitted when needed, and while the Examiner states that data sent when needed is periodic, it certainly is not periodic in the sense of the instant invention wherein the periodic data is transmitted in each transmission frame.

The Diaz reference also provides uniform time slots in which both asynchronous and isochronous types of data are transmitted. The applicant's invention, on the other hand, provides for a fixed time interval only for the periodic data, the other time slots being assigned by the master NIC module based on the required bandwidth of each transmission as is determined by an assignment of priorities by the master timing NIC upon request from the various modules wishing to transmit data. Independent claims 1, 9, 16, and 22 have been amended to more clearly point out this distinction. Accordingly, it is respectfully submitted that claims 1-24 for this reason distinguish patentably over the Diaz reference. Each of claims 1, 9, and 22 additionally refers to variable intervals of transmission for asynchronous data. Diaz shows nothing of the sort, but provides a series of fixed intervals for the transmission of aperiodic data. Accordingly, it is respectfully submitted that claims 1-15, and 22-24 distinguish over the cited Diaz et al. reference this additional reason.

With respect to claims 16-21, Diaz does not disclose the prioritization network as contemplated in claim 16. Nothing in Diaz, for example, shows a prioritization system of the instant invention. The Examiner states that the Diaz reference discloses, inter alia, a means for prioritizing an order of transmission of data. Diaz does not disclose, however a prioritization scheme for allocating bandwidth, or transmission intervals, based on a priority system. Accordingly, for this additional reason applicant believes that claims 16-21 distinguish patentably over the cited Diaz et al reference.

II. REFERENCE CITED BUT NOT APPLIED

The Birkedahl et al, Beutler, and Toillon et al references, cited but not applied in this or the prior office action have again been reviewed but are not believed to be relevant to the invention as claimed.

III. CONCLUSION

In view of Applicant's amendments and remarks, the Examiner's rejections are believed overcome. Accordingly, Applicant submits that the application, as amended, is now in condition for allowance and such allowance is therefore earnestly requested. Should the Examiner have any questions or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned at (480) 385-5060.

If for some reason Applicant has not requested a sufficient extension and/or has not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

Dated 22 Jan. 2003

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

In the present invention, both periodic and aperiodic data may be transmitted throughout the network 100. Figure 2 illustrates a timing diagram for accomplishing data transmissions that permits practical implementation of a protocol according to the invention. Signal 240 depicts a signal on backplane bus 168. Signal 200 represents a signal on network databus 114. As shown, signals 200 and 240 share the same time axis 206. One complete transmission cycle 245 of a signal 200 on the network databus 114 includes a synchronization interval 201, a periodic data interval 202, as well as an aperiodic data interval 204.

IN THE CLAIMS:

1. A network architecture supporting periodic and aperiodic transmission of data comprising:

a network databus;

a plurality of Network Interface Controller (NIC) modules capable of communicating over said network databus, at least one of said plurality of NIC modules acting as a master timing NIC module configured to allocate a first interval for transmission of periodic data over said databus and to dynamically assign [bandwidth on said network databus for transmission of data] variable intervals for transmission of aperiodic data on said network databus, said master timing NIC module including a means of determining what bandwidth is assigned to requests for aperiodic data transmissions based on priority, length and sequence of frames.

9. (Twice Amended) A network for transmitting data between network interface controllers in a communications system, said network comprising:

a first network interface controller;

a second network interface controller coupled to said first network interface controller, wherein one of said first and second network interface controller comprises a master timing network interface controller;

a plurality of modules coupled to either of said first and second network interface controllers, wherein said modules are capable of requesting transmission of aperiodic data; and

a means for prioritizing an order of transmission of said data and for dynamically allocating [bandwidth] variable transmission intervals for each transmission requested based on such prioritization and desired bandwidth.

16. A network for transmitting data between modules in a communications system, wherein said data comprises periodic data and aperiodic data, said network comprising;

a master network interface controller, wherein said master interface controller is capable of allocating a first interval for transmission of periodic data over said databus and of prioritizing transmission of said aperiodic data requested by said modules;

a first backplane coupled to said master network interface controller, at least one first module coupled to said first backplane, wherein data is transmittable from one of said first modules along said first backplane to other first modules and said master network interface controller;

a network databus coupled to said master network interface controller;

at least one network interface controller coupled to said network databus;

a second backplane coupled to said network interface controller;

at least one second module coupled to said second backplane, wherein data is transmittable from one of said second modules along said second backplane to other second modules and said network interface controller; and

wherein said first and second modules are capable of requesting transmission of said aperiodic data over said network databus, wherein said requests of transmission are dynamically prioritizable by said master network interface controller.

22. A method of transmitting both periodic and aperiodic data in a network system comprising a network databus with a plurality of Network Interface Controller (NIC) modules arranged to communicate said data over said network databus, at least some of said data arriving from a plurality of devices coupled to said NIC modules through a signal backplane, wherein at least one of said NIC modules acts as a master timing NIC module responsible for allocating a first interval for transmission of periodic data over said databus and for allocating bandwidth on said network databus, said method comprising the steps of:

transmitting all periodic data on said network databus during said first interval;

transmitting requests for said master timing NIC module for transmission of aperiodic data;

processing said requests by dynamically assigning [bandwidth] variable transmission intervals according to priority and availability of bandwidth on said network databus after transmission of said periodic data;

transmitting a status message to said plurality of NIC modules, said status message indicating what requests are assigned bandwidth on said network databus for transmission of aperiodic data and order of transmission; and

transmitting said aperiodic data over said network databus according to said order of transmission.